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THE INDUSTRIAL ASCENDENCY OF THE UNITED STATES.

Hon. NELSON W. ALDRICH, United States Senator from Rhode Island.

The industrial ascendancy of the United States is established by a comparison of the magnitude and character of her industries with that of her great rivals, Great Britain and Germany. It is evidenced alike by the larger aggregate and per capita value of her industrial products and by the much greater collective and individual earnings of her people. It is emphasized by a rapidity of growth unparalleled in the world's history.

In the limited time at my disposal I shall not attempt to enter upon an inspection of the whole range of our important industries, but shall confine myself to an examination, which will necessarily be general in its character, of the growth and prospects of American manufactures. The great importance of an investigation of this nature must be apparent when we consider that our continued industrial supremacy depends upon the assured progress and prosperity of our manufactures.

The published reports of the eleventh census contain the story of results accomplished up to 1890. For the years which have elapsed since 1890 we fortunately have sufficient data to enable us to approximate closely the percentage of growth which has taken place during that period. I will have printed, in connection with this paper, a statement showing the relative increase in production for the years 1890 to 1899, inclusive, in the United States, Great Britain and Germany. The tables in regard to Great Britain and Germany are less complete than those for the United States, but they are sufficient for the purpose of this inquiry. I will not stop to read this statement, but will content myself with stating the percentages of increase in each case.

The increase in the production of coal in the United States in the decennial period was 52.1 per cent, in Great Britain 11.2 per cent, and in Germany 46.6 per cent. As coal furnishes the basis for most industries these figures, perhaps, constitute the best test of the relative growth of the productive forces of the three countries.

It is a gratifying fact that in 1899, for the first time, the production of coal in the United States exceeded that of Great Britain. This statement becomes more interesting from the fact that a generation ago Great Britain's output was four times that of the United States and more than one-half of the world's total. Germany's output at that time was 15 per cent more than that of the United States, while in 1898 the output of the United States was 57 per cent more than that of Germany. In 1868 the coal production of the United States exceeded that of France by seventeen millions of tons, while in 1899 the excess of the American over the French product was more than two hundred millions of tons.

The increase in the production of pig iron in the United States in this period was 48 per cent. When we consider that it is a generally accepted fact that the rate of increase in the production of iron and steel in a country is a fair test of its advance in civilization in the arts, this large increase is most satisfactory. The increase in the production of pig iron in Great Britain was 11.2 per cent, while the increase in Germany was 72.3 per cent. It will be seen that the percentage of increase shown in Germany was greater than that in the United States, owing to the relatively small production in Germany in 1890. The actual increase in tonnage, however, was greater in the United States, the figures being an increase of 3,400,000 metric tons in Germany and 4,400,000 gross tons in the United States.

The increase in the number of cotton spindles was 25.6 per cent in the United States and 4.9 in Great Britain. The percentage of increase in this case is smaller than any of the

others under consideration, doubtless owing to the unusual depression in cotton manufacturing which continued during a considerable portion of the last ten years. The consumption of cotton, however, increased 56.2 per cent in the United States, while the increase in Great Britain was 9 per cent. These figures show very plainly the marked increase which has recently taken place in the productive capacity of American cotton machinery. The relative figures for Germany are not available, but it is safe to say that the increase of cotton manufactures in that country was much less relatively than in the United States.

Our imports of raw silk increased 52.9 per cent during the period named, while those of Great Britain increased 15.8 per cent and those of Germany 35.3 per cent.

The increase in the general business of the United States is shown by the increase in the transactions of the New York clearing house of 52.3 per cent, of deposits in national banks of 53.6, and of deposits in savings banks of 46.2 per cent.

We can assume that the number of persons employed in our manufacturing establishments increased proportionately with the increase of production, as the average number of employes in the decennial period ending in 1890 increased 65.77 per cent, while the increase in the value of the product was 69.31 per cent. The increase in the number of persons employed in specified industries in Germany, as shown by the German industrial census of 1895, was for thirteen years, from 1882 to 1895, 39.9 per cent, while the number of persons engaged in all textile industries in Great Britain decreased 2.2 per cent from 1890 to 1897.

Another indication of relative industrial growth is furnished by the fact that the domestic exports of the United States increased 42.4 per cent during the last ten years, while those of England increased 11.8 per cent and those of Germany 12.9 per cent. During the fourteen years ending 1899 the value of the domestic exports of Great Britain

increased 99 millions of dollars, those of Germany 212 millions, those of the United States 478 millions of dollars.

The figures I have given, taken together, show a probable increase in the manufactured product of the United States from 1890 to 1899 of from 40 to 50 per cent. Taking into account the decline in prices which has taken place, it is safe to assume that the total value of the manufactured products of the United States for the census year 1900 will be more than twelve thousand million dollars. This assumes, of course, that aggregate values will be ascertained by the same methods that were employed in taking the eleventh census.

Mr. Mulhall estimates the total value of the manufactured products of Great Britain in 1896 at 4,239 million dollars, and of Germany at 3,339 millions. If these estimates are approximately correct, as I presume they are, the annual value of the manufactured products of the United States is 2,000 millions greater than that of Great Britain and Germany combined.

The facts I have stated but partially disclose the great advances which have taken place in German manufactures as compared with those of Great Britain in recent years. One indication of the respective growth of the industries of the two countries is found in the fact that Great Britain furnished 39 per cent of our imports in 1860 and 17 per cent in 1899, while Germany furnished 5 per cent in 1860 and 12 per cent in 1899. The influence of the aggressive warfare which the managers of German industries are making for the control of markets, is felt throughout the world. American manufacturers, intelligent and energetic as they are, have much to learn from the experience and success of their German competitors.

In considering the recent progress of American production we should not fail to take into account the influences that retarded our normal industrial growth in the years following 1892. The widespread fears aroused by persistent agitation of monetary questions unsettled confidence at home and

abroad in the stability in value of our currency. Tariff agitation, culminating in the reactionary legislation of 1894, also had a deleterious effect. These influences arrested development to a considerable extent. For instance, the production of pig iron for the years 1894 to 1896 averaged annually but 8,200,000 tons, while for the three succeeding years the average was 11,700,000 tons. The average annual consumption of cotton in 1895 and 1896 was 2,500,000 pounds, and in 1898 and 1899, 3,250,000 pounds.

The same influences were felt in both imports and exports of manufactured goods. The value of the average annual exports of manufactured articles for the three years ending March 1, 1896, under the tariff act of 1894, was \$193,500,000, while for the three years ending March 1, 1900, under the act of 1897, the annual average was \$332,700,000. The annual average imports of manufactured articles ready for consumption, for the first period, under the act of 1894, was \$155,000,000, and for the two years 1898 and 1899, under the act of 1897, was \$103,000,000.

It is evident from an analysis of the comparative figures I have given, that notwithstanding the drawbacks I have mentioned, the progress of American manufactures has been much more satisfactory than that made by either of our principal competitors. A student of our industrial history is constantly impressed with the remarkable changes which are taking place in the character as well as the extent of our manufactured products. A generation ago American manufacturers were satisfied if they held a considerable portion of the domestic market for the lower grades of manufactured products, including the coarser cloths, both cotton and wool. No successful attempts were made to produce the finer articles of manufacture in any of the great lines of industry. To-day we hold the largest portion of the market for the finest goods of every description. A large part of the textile machinery of the United States is to-day employed in the production of goods which could not have been profitably

made in the United States thirty years ago. The revolution has been scarcely less radical in all the great industries.

In order to show how completely our domestic manufacturers have control of the American markets, I will say that the percentage which the imports of cotton manufactures bore to the total domestic consumption of cotton goods in 1899 was 3.4 per cent. The percentage of manufactures of wool was 5 per cent, of clothing, 1.4 per cent, and of the manufactures of iron and steel, 6 per cent. To illustrate the changes which have taken place, I will say that in 1860 we imported 25 per cent of our consumption of cotton manufactures, and 32 per cent of our consumption of woollens. Great Britain imports annually in value of manufactured products about \$16.00 per capita, while the United States imports but \$3.50 per capita.

American manufacturers have not only retained their hold on the home market, but they have successfully invaded foreign markets, and secured a constantly increasing proportion of international trade, as is clearly shown by the remarkable growth of our manufactured exports.

It is the character of international trade and not its extent that determines the measure of benefit to a country.

Under modern conditions, manufactures are not only necessary for successful industrial organization, but they also furnish the most satisfactory basis for profitable foreign trade. This latter fact is established by the experience of Great Britain for half a century. The remarkably successful efforts of Germany to extend her foreign trade through the protection and consequent prosperity of her manufactures, furnish another striking illustration of the accuracy of the statement.

The foreign trade most desirable for the United States to promote is that which provides for the exchange of her manufactured or partially manufactured products, those requiring the greatest amount of skill and labor in production, for the products of other countries which, from climatic

or other causes, cannot be produced here, or which we cannot produce with an equal expenditure of labor or skill. Foreign trade of this nature builds up domestic manufactures.

The manifest interest of the United States lies in enlarged exportation of manufactured rather than agricultural products. From a national standpoint it is clearly unprofitable for us to send abroad to other industrial countries our crude materials and food in exchange for manufactured articles in the production of which we have equal natural advantages. If our agricultural products could be first transformed into finished manufactured articles and then exported, great saving in the cost of transportation and other expenses would result, but the indirect consequences, from an industrial standpoint, would be even more important. Manufactures, once firmly established and covering the entire field of industrial creation, become the most effective agency for securing permanent improvement in the character of national productive forces.

It is quite natural, however, that our people, with a productive capacity in excess of their requirements, should seek an outlet for the disposition of their surplus, but in our commendable search for new markets for American products we should not forget, however, that it is still necessary for the continued prosperity of American manufacturers that they should retain the American markets, and that there should be no diminution in the purchasing ability of the American consumers from the present high level. This retention of domestic markets is rendered all the more imperative from the fact that under existing conditions many of our manufactures are only profitable when conducted on a large scale. We cannot overlook the fact that the strenuous contest for markets, enforcing a demand for cheaper methods and greater economies in production, is bringing about revolutionary changes in manufacture. A margin of profits is secured only by the savings in cost of administration and distribution, and by the use of better methods and stimulated

improvements in machinery, rendered possible through largely increased production.

I believe that in most cases where American manufacturers have wrested the control of the American market from foreign competitors the result has been lower prices for the product throughout the world. In a great number of instances we have, by the improved methods to which I have alluded, by a much greater use of machinery, and by the superior skill and enterprise of our mechanics, reduced the cost of production in the United States to a point which has enabled us to sell our goods in neutral markets. The number of articles that we can successfully produce in competition with our industrial rivals is constantly increasing.

But the advantages to which I have alluded do not exist in all cases, and the high level of earnings of all persons engaged in useful employments in the United States still necessitates a relatively higher cost of production here in many articles, and in order to enable the American producer in these articles to meet his foreign competitor in our own markets, it is necessary to equalize conditions by levying protective duties. In cases, however, in which the home market is extensive enough to awaken the inventive spirit and enlist the highest type of American skill and enterprise in production, we are constantly encroaching upon the markets of our industrial rivals and enforcing our demand for a fair share of foreign trade.

Having in view the standards for profitable American commerce, which I have endeavored to establish, it will be interesting to examine the changes which have taken place in the character of our imports and exports, as the nature of these indicate the growth in our productive capacity.

We will first take imports. I have assumed that the public interests would be promoted by increasing the importations of crude materials used in our industries, and by diminishing the importations of manufactured articles which compete with our own products. In the period from 1846

to 1861, when the revenue tariffs of 1846 and 1857 were in force, the proportion which articles in a crude condition used in American industry, bore to the entire importations, was 14 per cent. In the period from 1876 to 1890, this proportion had increased to 24 per cent. During the years 1898 and 1899, under the tariff act of 1897, the proportion was 31 per cent. In the first period I have mentioned, from 1846 to 1861, the percentage which the imports of articles manufactured ready for consumption, bore to the total imports, was 35 per cent. In the second period it was 20 per cent and in the years 1898 and 1899 it was 15.5 per cent. From 1846 to 1860 the increase in dutiable imports was 175 million dollars, from 1876 to 1889 the increase was 168 million dollars, while during an equal period in years from 1885 to 1899 there was an actual decrease in imports of one million dollars.

Coincident with this remarkable decrease in manufactured imports, we have even a more remarkable change in the character, and increase in the value of our exports. The value of our total exports rose from 316 millions in 1860 to 845 millions in 1890, and to 1,227 millions in 1899. The value of the exports of domestic manufactures in 1860 was 40 millions, or \$1.25 per capita; in 1890 151 millions, or \$2.41 per capita; and in 1899, 339 millions, or \$4.46 per capita. If we should take separate items we should find the increased rate more marked. For instance, the value of the exports of miscellaneous manufactures of iron and steel increased from 5 millions in 1860 to 25 millions in 1890 and to 93½ millions in 1899. In 1860 our exports of domestic manufactures formed 12.76 per cent of our total exports; in 1890 the proportion had risen to 17.27 per cent, and in 1899 to 28.21 per cent.

The statistics of total foreign commerce are not as favorable to the United States.

We find that the growth of our foreign commerce, between the years 1885 and 1899, was 45.9 per cent, while our

exports increased in the same period 65.1 per cent. The total foreign commerce of Germany increased in the years 1885 to 1898, 52.7 per cent, and her exports increased 31 per cent. The total foreign commerce of Great Britain increased, in the last period named, 22.2 per cent, while her exports increased 9.4 per cent. It will be observed that the increase in total foreign commerce was greater in Germany than in either Great Britain or the United States, but that the United States led the others in the growth of her exports.

While the growth of the foreign commerce of the United States is very creditable to her enterprise, it does not furnish the best indication of her real position as a commercial nation.

There is a class of people in this country who are inclined to follow the theories of British economists and exaggerate the importance of international trade. These theories had their origin in geographic rather than economic conditions.

The comparatively small area of the leading commercial nations of Europe gives a character to their foreign commerce which finds no analogy in a country of continental proportions like the United States. In one case the transportation of products a short distance across a river, a mountain range, or some less tangible boundary, constitutes foreign commerce, while in our country the exchange of the manufactured products of New England for the fruits of California or the cotton of Texas is classed as domestic trade. The value of the merchandise which crosses the English Channel, the North Sea, the Adriatic or the Mediterranean, swells the vast sum of European international trade, while the much greater value of American products transported across our Great Lakes or the gulfs and bays that stud our coast is not taken into consideration in estimating the foreign commerce of the United States.

A large portion of the internal commerce of the United States is analogous in every respect to the international commerce of Europe, and no comparison which seeks to determine the relative commercial importance of the nations

of the world can be fairly made which does not take this fact into consideration.

Mr. Mulhall estimates the value of the internal trade of the United States in 1894 at 14,466 million dollars. I believe that this estimate is a very conservative one. He estimates the internal trade of Great Britain for the same year as 5,774 millions, and that of Germany at 5,590 millions. If to these respective sums we should add the foreign commerce of each of these countries for the last year for which the statistics are available, we should have this result:

The total domestic and international trade of the United States would amount to 16,367 million dollars, that of Great Britain would amount to 8,900 million dollars, and that of Germany to 7,693 millions. It will be seen that the total trade of the United States is approximately equal to that of Great Britain and Germany combined. When we consider that the population of Germany in 1895 was 52 millions, and that of Great Britain in the same year was 39 millions, or a total for both countries of 91 millions, while the population of the United States for the same year was less than 70 millions, we can better form some idea of the pre-eminence of the United States as a commercial nation.

The array of statistics which I have presented disproves the teachings of that class of political economists who confidently assert that there can be no normal growth of either domestic production or foreign trade in a country which has adopted a protective policy. Those who make the assertion are forgetful of facts and do not comprehend the nature of the policy. It is not a policy of exclusion, but of discrimination. It does not seek to arrest foreign commerce, but to direct its flow into profitable channels. It is not a policy of restriction, but of expansion—expansion through a better diversification of national industries and a more thorough organization and development of national forces.

It should be the primary purpose of our protectionists to aid through intelligent legislation, in the great work of

American industrial evolution, and to encourage such agencies as will contribute to this result. Intelligent advocates of the protective policy have no programme to enforce, except such as conforms to the demands of our national interests from time to time.

The creditable record of the past adds to our sense of responsibility for the future. We shall, however, enter upon the new century better prepared than ever before, for industrial conquest, and with many conditions favorable to our continued success.

We have reason to believe that recent legislation has settled the policy of the United States in regard to its currency and standard of value for the next generation. This will give confidence to enterprise and do much indirectly to aid in industrial development. The tariff policy of the country may also be looked upon as settled for many years to come, and this fact should also give a feeling of security alike to employers and employed. I do not mean that changed conditions will not necessitate an occasional revision of tariff rates; but we may confidently expect that these adjustments will be made with a view to protect and conserve our national interests.

To secure any considerable increase in our foreign trade in domestic products in the face of the fierce competition we are certain to encounter will, however, under any possible circumstances, make serious demands upon the resources of American producers.

Every community interested in manufactures must furnish to its people better means for thorough technical education, having special reference to the demands of local industries. Our manufacturers and merchants must study more carefully the requirements of foreign markets. They must profit by the valuable experience of their rivals. They must acquire a better knowledge of the habits, demands and language of their customers. In styles and in preparation for transportation they must be governed by the wishes, or prejudices,

if you please, of their customers, and not by their own pre-conceived notions. Our capitalists and merchants must establish banking and commercial agencies wherever an extension of our trade is possible.

Equally exigent demands rest upon the national government in this connection, which can be met, first, by affording our people better facilities for transportation through the encouragement of frequent and direct steam service with the countries that are our natural customers. We should not hesitate to adopt, in this respect, the agencies that have been found so effective in the experience of other commercial nations; second, by the adoption of commercial treaties or reciprocity arrangements looking to the extension of our trade with our South and Central American neighbors and the countries of the Orient; and third, by providing a more efficient consular service.

The great work of extending our reciprocal trade in the manner I have indicated, should be promptly inaugurated. Our commercial rivals have, either through actual absorption of territory or by increasing their respective spheres of influence, secured advantages of more or less importance in most of the neutral markets of the world, outside of the area I have named.

With a full understanding of the nature of the task we have in hand we shall not fail.

We enter upon the great industrial contests of the future with the prestige of unparalleled achievement. We have unequaled natural resources. Our productive forces are fully developed. Our industries are thoroughly organized. We have unrivaled wealth of soil and inexhaustible mineral deposits. Better than all, we have a vast army of intelligent, alert, and self-reliant producers, who are receiving a constantly increasing proportion of the benefits derived from our superior industrial organization.

With such resources and such a people the industrial ascendancy of the United States is secure.

United States.

	1890.	1899.	Percentage of Increase.
Tons pig iron production	9,202,703	13,620,703	48.0
Tons coal production	157,770,963	240,000,000	52.1
Number cotton spindles	14,405,000	18,100,000	25.6
Consumption cotton, bales	2,325,000	3,632,000	56.2
Tons freight carried one mile	79,192,985,125	114,566,173,191	44.6
Imports of raw silk, pounds	7,347,909	11,236,846	52.9
Transactions New York Clearing House	\$37,660,686,572	\$57,368,230,771	52.3
Deposits in national banks	\$1,594,200,000	\$2,450,700,000	53.6
Deposits in savings banks	\$1,524,844,506	\$2,230,366,954	46.2
Domestic exports, value	\$845,293,828	\$1,203,931,222	42.4

Great Britain.

Number cotton spindles	43,750,000	45,400,000	4.9
Consumption cotton, bales	3,227,000	(1898) 3,519,000	9.0
Tons pig iron production	7,904,214	(1898) 9,305,319	17.7
Tons coal production	203,408,003	(1898) 226,301,058	11.2
Number persons engaged in all textile industries	1,084,631	1,051,564 (1897)	2.2 decrease.
Domestic exports, value	\$1,281,377,000 (1898)	\$1,134,000,000	11.5 decrease.
Imports raw silk, pounds	1,961,281	(1898) 2,268,762	15.8

Germany.

Number persons employed in specified industries	39.9 1882 to 1895
Domestic exports, value	\$791,716,000	\$894,062,000	12.9 1890 to 1898
Tons pig iron production	4,658,450	8,029,305	72.3 1890 to 1898
Tons coal production	93,398,500	144,283,196	46.6 1890 to 1898
Imports raw silk, kilograms	2,309,509	3,125,600	35.3 1890 to 1898